

Offers the best performance for automotive parts applications !

■ Smooth chip control even at varied depths of cut, feeds and cutting speeds !



New Chip Breaker

MP Breaker

Outline

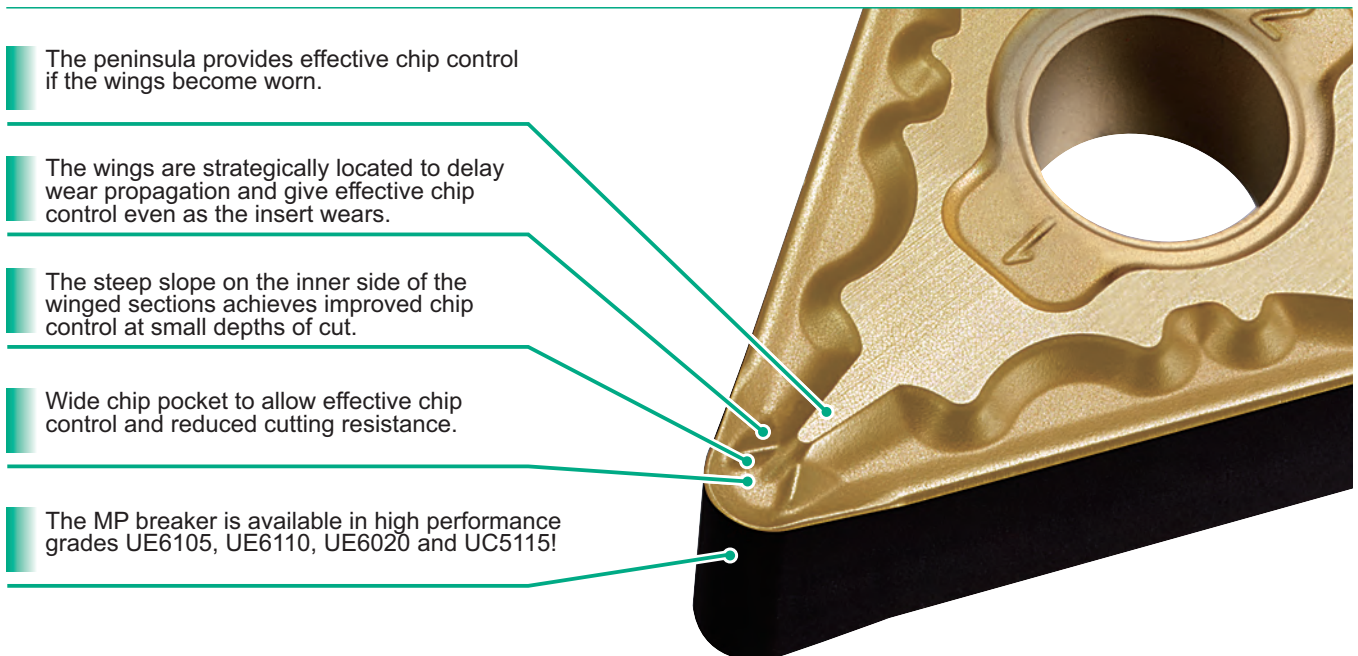
When copying, cutting conditions such as the depth of cut, feed rate and cutting speed can vary.

This can lead to a number of problems and reduce efficiency:

- Ineffective chip control due to the use of one breaker style.
- Machine down time due to chip jamming.
- Poor tool management due to the use of numerous insert geometries.

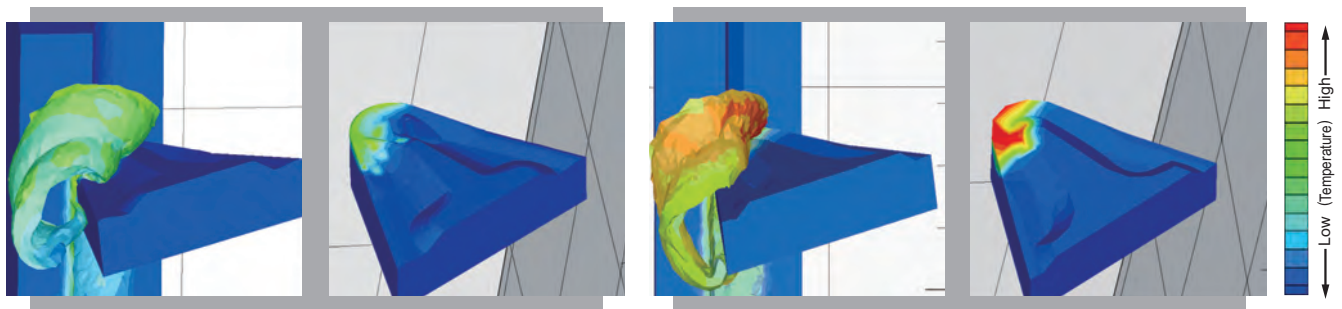
MP breaker uses a unique geometry that provides effective chip control over a wide application area. It also improves wear resistance because of lower heat generation during cutting, therefore contributing to a large increase in productivity.

Features



Analysis: Chip geometry and cutting edge temperatures

Low cutting heat reduces crater wear! Lower workpiece temperatures lead to higher dimensional accuracy!



MP Breaker

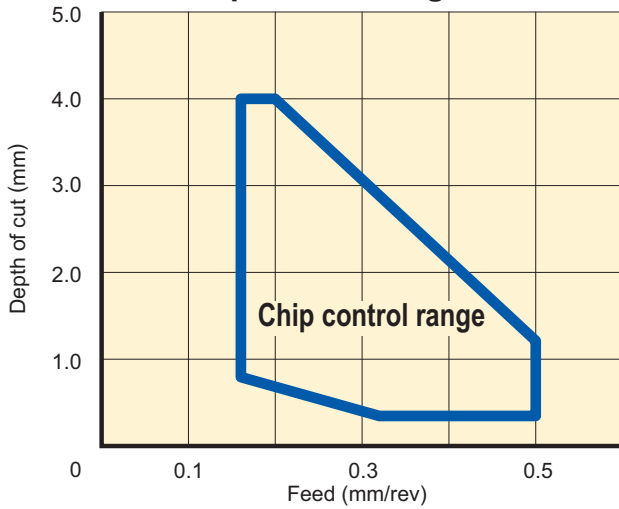
Conventional breaker

<Cutting Conditions>

Insert : DNMG150412-00 Feed : 0.4mm/rev
Workpiece : DIN Ck45 Depth of cut: 2.0mm
Cutting speed: 200m/min Dry cutting

Cutting performance

Effective chip control range



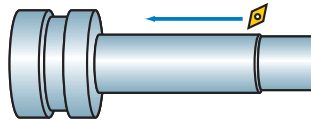
<Cutting conditions>

Insert : CNMG120408-MP
 Workpiece : DIN 42CrMo4
 Cutting speed: 200m/min
 Wet cutting

Chip control comparison

Cutting speed	MP Breaker	Conventional breaker
200m/min		
400m/min		

DIN Ck45



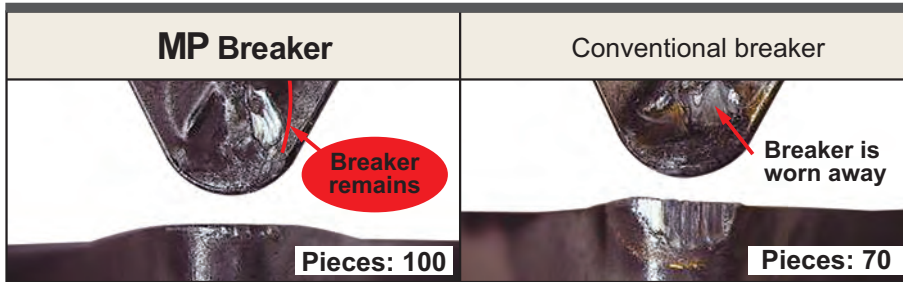
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Insert : DNMG150412-00
 Feed : 0.45mm/rev
 Depth of cut : 1.0mm
 Wet cutting

Cutting edge comparison

<Cutting Conditions>


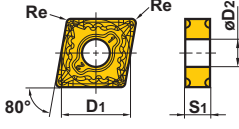

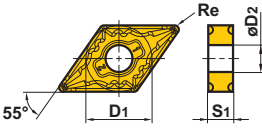

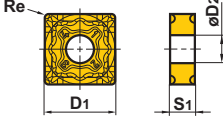

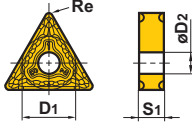

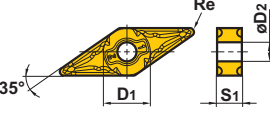

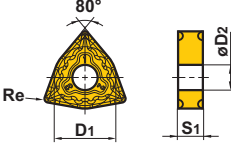
Workpiece : DIN Ck55 Feed : 0.2~0.5mm/rev
 Insert : DNMG150412-00 Depth of cut : 0.4~2.5mm
 Cutting speed: 230m/min Wet cutting



Recommended cutting conditions

Work Material	Hardness	Grade	Recommended Cutting Speed (m/min)	Work Material	Hardness	Grade	Recommended Cutting Speed (m/min)		
P Mild Steel	≤180HB	UE6105	370 (260-470)	K Cast Iron	Tensile Strength ≤300MPa	UC5115	230 (160-300)		
		UE6110	340 (250-420)			Ductile Cast Iron	Tensile Strength ≤450MPa	UC5115	230 (160-300)
		UE6020	310 (240-380)					Tensile Strength 500-800MPa	UC5115
	Carbon Steel Alloy Steel	180-280HB	UE6105		290 (200-370)				
			UE6110		260 (190-330)				
			UE6020		240 (180-300)				

Inserts

Shape	Order Number	Coated				Dimensions (inch)				Geometry
		UE6105	UE6110	UE6020	UC5115	D1	S1	Re	D2	
MP Breaker  Medium Cutting	CNMG120404-MP	●	●	●	●	12.7	4.76	0.4	5.16	
	120408-MP	●	●	●	●	12.7	4.76	0.8	5.16	
	120412-MP	●	●	●	●	12.7	4.76	1.2	5.16	
	120416-MP	●	●	●	●	12.7	4.76	1.6	5.16	
	160608-MP	●	●	●	●	15.875	6.35	0.8	6.35	
	160612-MP	●	●	●	●	15.875	6.35	1.2	6.35	
	160616-MP	●	●	●	●	15.875	6.35	1.6	6.35	
MP Breaker  Medium Cutting	DNMG150404-MP	●	●	●	●	12.7	4.76	0.4	5.16	
	150408-MP	●	●	●	●	12.7	4.76	0.8	5.16	
	150412-MP	●	●	●	●	12.7	4.76	1.2	5.16	
	150416-MP	●	●	●	●	12.7	4.76	1.6	5.16	
	150604-MP	●	●	●	●	12.7	6.35	0.4	5.16	
	150608-MP	●	●	●	●	12.7	6.35	0.8	5.16	
	150612-MP	●	●	●	●	12.7	6.35	1.2	5.16	
150616-MP	●	●	●	●	12.7	6.35	1.6	5.16		
MP Breaker  Medium Cutting	SNMG120404-MP	●	●	●	●	12.7	4.76	0.4	5.16	
	120408-MP	●	●	●	●	12.7	4.76	0.8	5.16	
	120412-MP	●	●	●	●	12.7	4.76	1.2	5.16	
MP Breaker  Medium Cutting	TNMG160404-MP	●	●	●	●	9.525	4.76	0.4	3.81	
	160408-MP	●	●	●	●	9.525	4.76	0.8	3.81	
	160412-MP	●	●	●	●	9.525	4.76	1.2	3.81	
	220408-MP	●	●	●	●	12.7	4.76	0.8	5.16	
	220412-MP	●	●	●	●	12.7	4.76	1.2	5.16	
MP Breaker  Medium Cutting	VNMG160404-MP	●	●	●	●	9.525	4.76	0.4	3.81	
	160408-MP	●	●	●	●	9.525	4.76	0.8	3.81	
	160412-MP	●	●	●	●	9.525	4.76	1.2	3.81	
MP Breaker  Medium Cutting	WNMG06T304-MP	●	●	●	●	9.525	3.97	0.4	3.81	
	06T308-MP	●	●	●	●	9.525	3.97	0.8	3.81	
	06T312-MP	●	●	●	●	9.525	3.97	1.2	3.81	
	060404-MP	●	●	●	●	9.525	4.76	0.4	3.81	
	060408-MP	●	●	●	●	9.525	4.76	0.8	3.81	
	060412-MP	●	●	●	●	9.525	4.76	1.2	3.81	
	080404-MP	●	●	●	●	12.7	4.76	0.4	5.16	
	080408-MP	●	●	●	●	12.7	4.76	0.8	5.16	
	080412-MP	●	●	●	●	12.7	4.76	1.2	5.16	
080416-MP	●	●	●	●	12.7	4.76	1.6	5.16		





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